

REMARKS

Favorable reconsideration is respectfully requested in light of the following remarks.
Currently, Claims 1-5 are pending in the present application.

Claims 1-5 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,688,468 to *Axinti et al.*

The present invention, as defined in independent Claim 1, pertains to a pressure-fluid-operated percussion device, which comprises a frame allowing a tool to be arranged therein movably in its longitudinal direction, means for feeding pressure liquid to the percussion device and for returning pressure liquid to a pressure liquid tank, and means for producing a stress pulse in the tool by utilizing pressure of the pressure liquid. The percussion device comprises a working pressure chamber filled with pressure liquid and, between the working pressure chamber and the tool, a transmission piston which is movably arranged in the longitudinal direction of the frame and which is in contact with the tool either directly or indirectly at least during stress pulse generation. A charging pressure chamber is provided on the side of the transmission piston facing the tool so that the transmission piston is provided with a pressure surface facing the working pressure chamber and on the side of the charging pressure chamber a pressure surface facing the tool. The means for producing a stress pulse comprise a pressure liquid source connected with the working pressure chamber in order to maintain pressure in the working pressure chamber, and means for intermittently feeding, to the charging pressure chamber, pressure liquid whose pressure enables the transmission piston to be pushed towards the working pressure chamber, against the pressure of the pressure liquid in the working pressure chamber and into a predetermined backward position of the transmission piston such that pressure liquid is discharged from the working pressure chamber, and for alternately allowing pressure liquid to be discharged rapidly from the

charging pressure chamber so that a force produced by the pressure of the pressurized pressure liquid in the working pressure chamber and flowing thereto from the pressure liquid source pushes the transmission piston in the direction of the tool, compressing the tool in its longitudinal direction and thus generating a stress pulse in the tool.

According to the features of the present invention, the transmission piston is set to be in contact with the tool directly or via a transmitting piece between the piston and the tool. When the transmission piston is released, the force created by the pressure of the pressure liquid acting on the contact surface of the transmission piston acts through the piston to the tool and compresses the tool. As a result of the compression, there will be a stress pulse in the tool which stress pulse is as long as the time which the force compresses the tool. None of the art of record discloses these patentable features.

In contrast, *Axiniti et al.* discloses a striking machine in which piston 1 moves in a reciprocating motion and strikes a tool 18. In *Axiniti et al.*, the movement of the piston 1 is controlled by using hydraulic binary logic elements which start the strike towards the tool when the pressure in accumulator 5 reaches its maximum prescribed pressure. The whole operation of the striking piston 1 is controlled by hydraulic binary logic elements, pressure sensors and the pressure accumulator without a normal control valve.

However, *Axiniti et al.* fails to disclose that (1) the transmission piston is in contact with a tool either directly or indirectly at least during the stress pulse generation; and (2) that the force produced by the pressure of the pressurized liquid in the working pressure chamber pushes the transmission piston in the direction of the tool compressing the tool in its longitudinal direction and thus generating a stress pulse in the tool. Moreover, in *Axiniti et al.*, the stress pulse is created at the same moment as the striking piston 1 strikes the tool 18. The length of the stress pulse does not depend on the time when the pressure moves the

piston towards the tool, but is only in relation to the mechanical dimensions of the striking piston. Accordingly, *Axiniti et al.* fails to disclose the patentable features of independent Claim 1.

For at least the foregoing reasons, it is submitted that the apparatus of Claim 1, and the claims depending therefrom, are patentably distinguishable over the applied document. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

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